

We Claim:

1. A blood separation assembly comprising  
a blood processing chamber comprising a base  
including formed walls that define a separation channel, and  
a centrifuge rotor rotatable about a rotational  
axis, the centrifuge rotor including a latch assembly  
including a latch arm pivotally mounted on the centrifuge  
rotor for movement between a chamber-retaining position  
engaging the blood processing chamber, to secure the blood  
processing chamber to the centrifuge rotor, and a chamber-  
releasing position free of engagement with the blood  
processing chamber, to enable removal of the blood  
processing chamber from the centrifuge rotor, and a pawl  
movable on the centrifuge rotor between a first position  
adjacent the latch arm and a second position spaced from the  
latch arm, the pawl including a locking element that engages  
the latch arm when the latch arm is in the chamber-retaining  
position to resist movement of the latch arm toward the  
chamber-releasing position, and a spring coupled to the pawl  
to bias the pawl toward the first position.

2. An assembly according to claim 1  
wherein the formed walls of blood processing  
chamber include an annular lip, and

wherein the latch assembly includes an annular  
grove on the centrifuge rotor sized to mate with the annular  
lip, the latch arm including a groove that coincides with  
the annular groove when the latch arm is in the chamber-  
retaining position and that interrupts the annular groove  
when the latch arm is in the chamber-releasing position.

3. An assembly according to claim 1  
wherein the pawl includes a key element that  
moves in concert with the pawl, and

further including a collar mounted for rotation  
relative to the centrifuge rotor about the rotational axis,  
the collar including a sidewall that interferes with the key  
element to prevent movement of the pawl from the first  
position toward the second position, the collar including a

cut away region that moves into and out of mutual alignment with the key element during rotation of the centrifuge rotor relative to the collar, the cut away region being sized to permit passage of the key element in response to movement of the pawl from the first position toward the second position when the key element and cut away region are in mutual alignment.

4. An assembly according to claim 1

wherein the blood processing chamber comprises a molded base assembly defining a hub about which the separation channel circumferentially extends, and at least one radial passage that directs fluid between the hub and the separation channel.

5. A blood separation assembly comprising

a frame rotatable about a rotational axis,

a rotor carried by the frame for relative rotation about the rotational axis,

a blood processing chamber comprising a base including formed walls that define a separation channel, and

a latch assembly on the rotor including a latch arm mounted for movement between a chamber-retaining position engaging the blood processing chamber to secure the blood processing chamber to the rotor for common rotation therewith relative to the frame and a chamber-releasing position free of engagement with the blood processing chamber to enable removal of the blood processing chamber from the rotor.

6. An assembly according to claim 5

wherein the latch assembly includes a pawl movable on the rotor between a first position adjacent the latch arm and a second position spaced from the latch arm, the pawl including a locking element that engages the latch arm when the latch arm is in the chamber-retaining position to resist movement of the latch arm toward the chamber-releasing position, and a spring coupled to the pawl to bias the pawl toward the first position.

7. An assembly according to claim 6

wherein the pawl includes a key element that moves in concert with the pawl, and

5 further including a collar mounted on the frame  
for rotation with the frame relative to the rotor, the  
collar including a sidewall that interferes with the key  
element to prevent movement of the pawl from the first  
10 position toward the second position, the collar including  
a cut away region that moves into and out of mutual  
alignment with the key element during relative rotation of  
the frame and rotor, the cut away region being sized to  
15 permit passage of the key element in response to movement of  
the pawl from the first position toward the second position  
when the key element and cut away region are in mutual  
alignment.

8. An assembly according to claim 5

further including an umbilicus coupled to the separation chamber, and

5 wherein the frame includes at least one umbilicus  
support element that engages the umbilicus when the blood  
processing chamber is secured to the rotor and rotates the  
umbilicus about the rotational axis during rotation of the  
frame, the rotation of the umbilicus imparting rotation to  
the rotor.

9. An assembly according to claim 8

5 wherein the blood processing chamber comprises a  
molded base assembly defining a hub about which the  
separation channel circumferentially extends, and at least  
one radial passage that directs fluid between the hub and  
the separation channel, the hub being further formed to  
enable attachment of the umbilicus to convey blood to and  
from the separation channel through the hub.

10. An assembly according to claim 4

5 wherein the blood processing chamber comprises a  
molded base assembly defining a hub about which the  
separation channel circumferentially extends, and at least  
one radial passage that directs fluid between the hub and  
the separation channel.